

Reassessment of Commodity Tolerances that are Insignificant Contributors to the N-methyl Carbamate Cumulative Risk

June 29, 2006

I. Background and Introduction

The Food Quality Protection Act (FQPA) of 1996 requires EPA to consider available information concerning the cumulative effects on human health resulting from exposure to multiple chemicals that have a common mechanism of toxicity. In 2001, EPA concluded that the *N*-methyl carbamate (NMC) pesticides share a common mechanism of toxicity and therefore require a cumulative assessment under FQPA. The ten pesticides in the NMC common mechanism group are aldicarb, carbaryl, carbofuran, formetanate hydrochloride, methiocarb, methomyl, oxamyl, pirimicarb, propoxur, and thiodicarb. The Agency's tolerance reassessment decisions for these ten NMC pesticides must be based on the interim tolerance reassessment decisions for each individual compound, as well as the NMC cumulative assessment. EPA released the *Preliminary Assessment of Cumulative Risk from N-Methyl Carbamate Pesticides* in August 2005.

As part of its ongoing work to complete the NMC cumulative assessment, EPA has determined that 144 of the NMC tolerances are insignificant contributors to the overall dietary exposure to the NMCs. These commodity/chemical combinations, when considered together, make such a minor or negligible contribution to the cumulative risk of the NMCs that the addition or subtraction of those uses from the risk cup would have no quantified significance and would therefore have no impact on whether the NMCs as a group meet the FQPA safety standard in section 408(b)(2) of the Federal Food, Drug and Cosmetic Act (FFDCA). Because these uses, by themselves, add no meaningful risk, and because, as a result, they will have no effect on the retention or revocation of other NMC tolerances, EPA intends to count these negligible uses as reassessed before the final NMC cumulative assessment is issued. As described in detail below, the Agency has taken a conservative, health-protective approach in determining the criteria for this analysis and is thus confident that these tolerances can be considered to be reassessed as required under section 408(q).

For each of the 144 tolerances being reassessed at this time, the Agency has issued an Interim Reregistration Eligibility Decision (IRED) which found that, apart from consideration of the potential cumulative risks from all of the NMCs, each tolerance would meet the section 408(b)(2) safety standard. EPA has also considered the impact of these tolerances on the NMC cumulative risks and has determined that they make an insignificant contribution to the overall risks from the NMCs. Therefore, these tolerances will be maintained regardless of the outcome of the NMC cumulative assessment and any potential regulatory action taken as a result of that assessment. Accordingly, EPA believes it is appropriate to consider these 144 tolerances reassessed for the purposes of FQPA section 408(q) as of today's date, June 29, 2006.

II. NMC Tolerances Requiring Reassessment under FQPA

FQPA required EPA to reassess all tolerances in existence when FQPA became law on August 3, 1996. For the ten pesticides in the NMC common mechanism group, there were a total of 320 tolerances that required reassessment because they were in existence on the day that FQPA was enacted.

To date, ninety-two of the 320 NMC tolerances requiring reassessment under FQPA have already been reassessed. The ninety-two tolerances include seven methiocarb tolerances, eighty methomyl tolerances, and five thiodicarb tolerances. The methiocarb tolerances are considered reassessed because all methiocarb tolerances were revoked in 1998.¹ The methomyl and thiodicarb tolerances are considered reassessed because EPA issued REDs and associated tolerance reassessment decisions for methomyl and thiodicarb in 1998, prior to the Agency's determination that these compounds would be part of the NMC common mechanism group. Please see Table A.6 in the Appendix for a listing of the reassessed tolerances for methiocarb, methomyl, and thiodicarb.

III. Determination of Insignificant Contributors

This section describes the procedures EPA followed to determine the number of NMC tolerances that could be reassessed based on an insignificant contribution to the total NMC risk in food. These NMC tolerances, termed Insignificant Contributors, are the subset of NMC crop/chemical combinations that, when expressed in terms of index-chemical equivalents and considered together as part of a cumulative risk assessment, contribute to only a small fraction of the NMC cumulative risk from food. Such a designation to specific crop/chemical combinations² permits the Agency to conclude that the contribution to dietary risk of the NMC tolerances associated with these crop/chemical combinations is relatively small and that these tolerances can thus be reassessed prior to EPA's issuance of the revised NMC cumulative risk assessment. Only tolerances for NMCs with completed IREDs were eligible for designation as Insignificant Contributors.

The Agency notes that this is a screening-level assessment designed to ensure that risk will not be underestimated. EPA fully expects that additional NMC tolerances will be eligible for reassessment in the near future when the Agency issues the revised NMC cumulative assessment, which will use more refined information.

¹ 63 *Federal Register* 57067, October 26, 1998.

² In some cases, a crop/pesticide combination is really a crop group/pesticide combination if the tolerance is applicable to a crop group. For example, if a tolerance were established for a given pesticide on citrus fruits, this would be considered a single crop (group)/pesticide combination despite the fact that the tolerance applies to all crops in that crop group (e.g., oranges, grapefruits, lemons, limes, etc.)

Hazard/Relative Potency Factors

In the current analysis, EPA used the relative potency factors (RPFs) and points of departure established in the preliminary cumulative risk assessment (August 2005) for brain cholinesterase inhibition. For details about the data and methods used to derive these values, please refer to Chapter I.B and associated appendices and data sets in the preliminary cumulative risk assessment (August 2005) (available at <http://www.epa.gov/pesticides/cumulative>). The Agency used benchmark dose (BMD) methods to estimate the dose expected to result in 10% brain cholinesterase inhibition (BMD₁₀) in adult rats following acute exposures. EPA calculated RPFs by dividing BMDs for specific pesticides by the BMD for the index chemical, oxamyl.

The Agency anticipates that most of the RPFs and points of departure used in this Insignificant Contributors analysis (and also in the August 2005 preliminary NMC cumulative assessment) will be substantially similar to those that will be used in the forthcoming revised NMC cumulative assessment. If some values do differ, it will be because the revised cumulative assessment uses values that have been further refined based on recently-submitted data.

Dietary Exposure

EPA began the process of identifying Insignificant Contributors by performing a baseline dietary exposure analysis. The baseline assessment for the Insignificant Contributors analysis used the same residue and consumption data from the August 2005 preliminary NMC cumulative risk assessment (except that 2004 PDP data were also included), and it also included similar assumptions about processing factors, zero residues, and crop translations.³

EPA used pesticide residues reported in PDP from 1994-2004 (registered or not) from all ten NMC pesticides for this Insignificant Contributors analysis. The PDP residue data were further extended (translated) to other commodities identified as reasonable for translation of pesticide residue data per Agency policy.⁴ Residues from fish and eggs were not included in this assessment and, based on examination of FDA monitoring results, are not anticipated to contribute significantly to risk associated with the NMC pesticides. However, recent PDP data on beef, pork, and poultry were included in the assessment. Together, the food commodities in the PDP program and those commodities to which the residues are translated account for greater than 90%-95% of children's diets. Exposure for children 1-2 years of age was earlier identified as of specific interest since this was the subgroup with the highest exposure in the preliminary NMC cumulative risk assessment. Dietary (food only) exposure was estimated using the Dietary Exposure Evaluation Model (DEEMTM) software which incorporates the 1994-96/1998 USDA continuing Surveys for Food Intake by Individuals (CSFII) data and EPA's Revised Food

³ The key differences between the food files used in the August 2005 preliminary NMC cumulative risk assessment and those used in the Insignificant Contributors analysis are: (1) PDP residues were updated to include the most recent PDP data (through 2004) including additional data on methomyl on strawberries; (2) processing factors were updated to account for new food forms that appeared in the new PDP data; and (3) aldicarb data on potatoes was modified by deleting the pre-1996 aldicarb data on potatoes. The deletion of pre-1996 aldicarb data is appropriate because the use of aldicarb on potatoes was voluntarily suspended in 1990. The use was reinstated in 1995. Accordingly, PDP data beginning in 1996 is most appropriate to reflect current aldicarb use on potatoes.

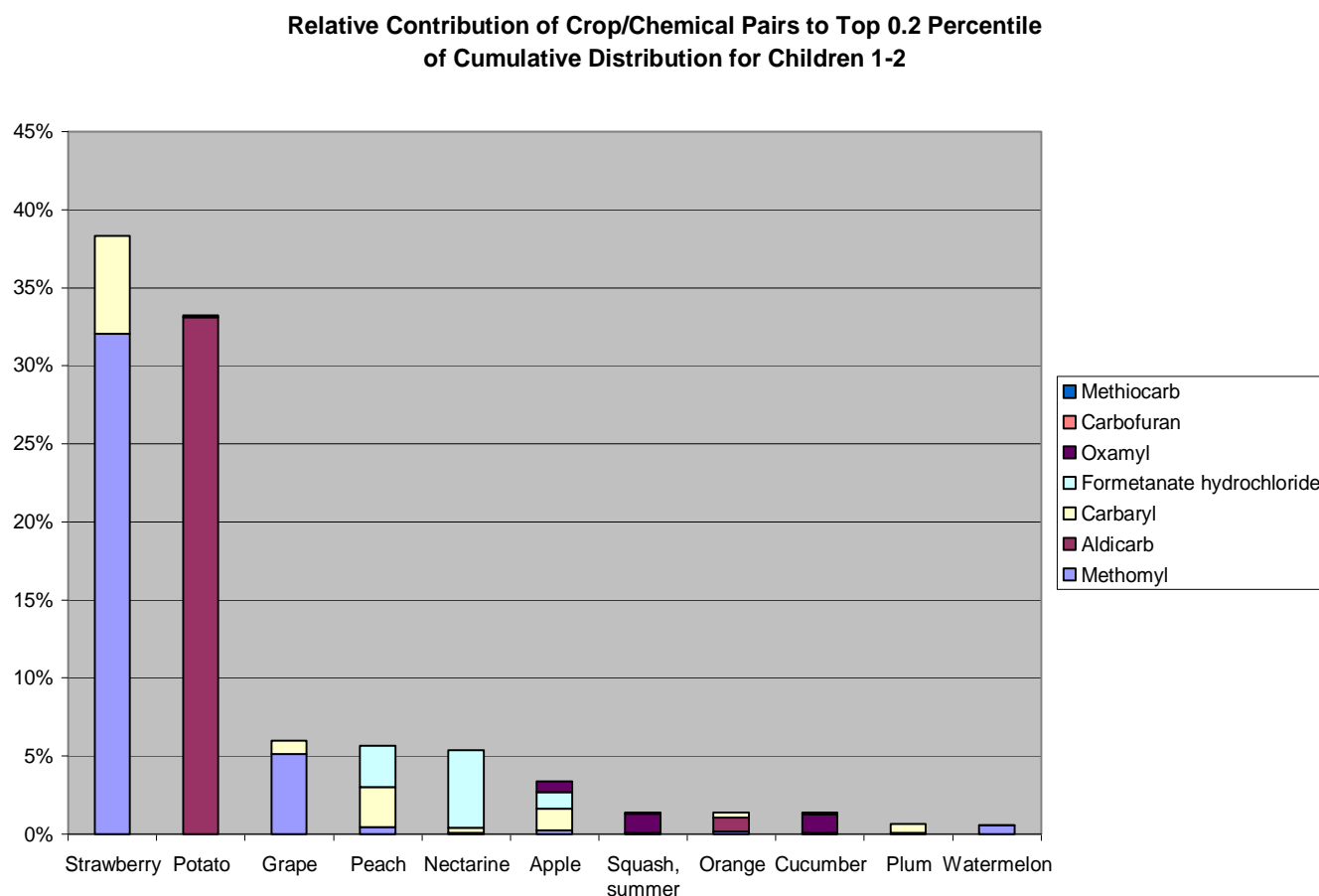
⁴ OPP/HED SOP 99.3. Memorandum from Margaret Stasikowski, Health Effects Division to Staff. "Translation of Monitoring Data." HED Standard Operating Procedure 99.3 (3/26/99), USEPA.

Commodity Intake Database (Revised FCID). For more information, please refer to Chapter I.C and the associated appendices and datasets in the preliminary NMC cumulative risk assessment.

As described in more detail in the preliminary NMC cumulative assessment, EPA adjusted the amount of residue of each chemical by multiplying by an RPF to obtain the equivalent residue of an index chemical and summed these within each sample. The new calculated residue is termed the Index Equivalent Residue ($\text{Residue}_{\text{IE}}$) and the exposure value resulting from combining $\text{Residue}_{\text{IE}}$ and consumption is termed the Index Equivalent Exposure ($\text{Exposure}_{\text{IE}}$). EPA calculated Margins of Exposure (MOEs) by comparing the potency adjusted exposure to the point of departure for the index chemical (ie, oxamyl).

Figure 1 below provides a graphical description of the major contributors to the baseline cumulative dietary risk when all 10 NMCs are included.

Figure 1. Plot of major contributors to the NMC cumulative risk from food⁵



⁵ Three NMCs are not included in the legend – propoxur, thiodicarb, and pirimicarb. These pesticides were either not detected in the PDP data or were detected at such low concentrations and frequencies that they are not sufficient contributors to appear on the graph.

Criteria for Designation as an Insignificant Contributor

EPA established several criteria for designating crop/chemical combinations as Insignificant Contributors.

1. Crop/chemical combinations that produce an MOE greater than 1000 when considered together are Insignificant Contributor tolerances.
 - The Agency selected 1000 as a highly-conservative point of comparison, incorporating a 10x for interspecies extrapolation, a 10x for intraspecies extrapolation, and a 10x FQPA safety factor for protection of infants and children. The assignment of a value of 10x for the interspecies extrapolation factor is conservative given that human studies are available to inform the chemical-specific interspecies factor for some NMCs.⁶ The assignment of a value of 10x for the FQPA safety factor is also conservative given that there are studies available for some NMCs which compare the relative sensitivity in juvenile and adult rats, and which will be used to inform the chemical-specific FQPA factors.⁷
2. Only tolerances for chemicals with completed IREDs are eligible for designation as Insignificant Contributors.
3. Any pesticide/crop combination with NO detects in all years of PDP monitoring was considered an Insignificant Contributor.
4. Meat, Milk, Poultry and Egg tolerances for which exposure is deemed negligible were considered Insignificant Contributors.
5. Livestock feedstuffs associated with the meat, milk, poultry, and egg samples with few, small, or no detectable residues were considered Insignificant Contributors.

Procedure for Identifying the Insignificant Contributors

As described in section II of this document, there were a total of 320 NMC tolerances that required reassessment because they were in existence on the day that FQPA became law. Ninety-two of the NMC tolerances have already been reassessed (7 methiocarb tolerances, 80 methomyl tolerances, and 5 thiodicarb tolerances). So, EPA used 228 tolerances as the starting point for the 'Insignificant Contributors' analysis.

⁶ Human studies for aldicarb, methomyl, and oxamyl were reviewed by the Human Studies Review Board (HSRB) in April, 2006 and determined to be appropriate for use in the NMC Cumulative Risk Assessment. At the May, 2006 meeting of the HSRB, the board did not support the use of the carbofuran oral human study for informing the inter-species factor.

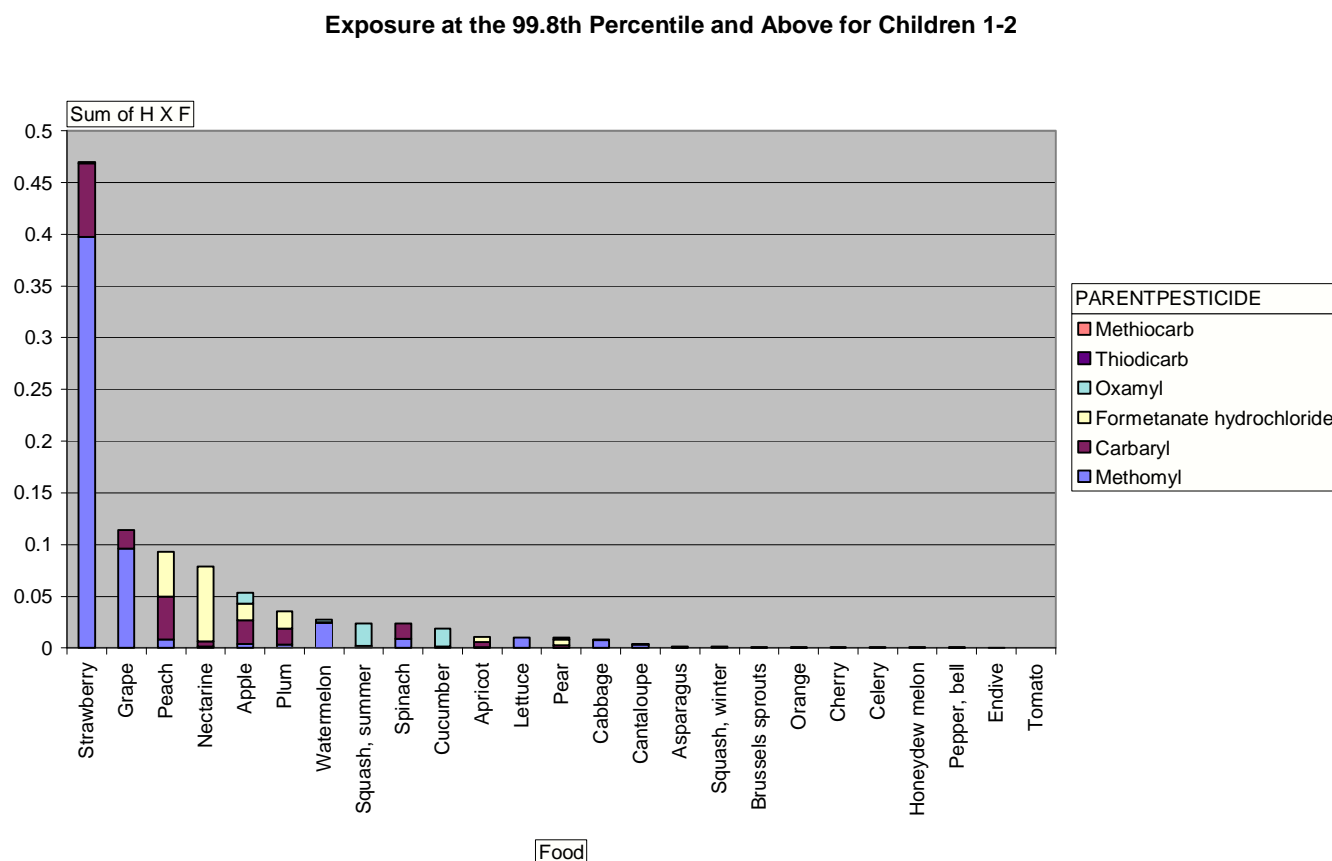
⁷ Comparative cholinesterase studies in adult and juvenile rats are available for carbofuran, formetanate HCl, methomyl, and oxamyl which evaluate peak and time course brain ChE inhibition. A dose-response study with adult and juvenile rats exposed at peak time of effect is available for aldicarb.

EPA notes, however, that some methomyl uses appear to be contributors to the cumulative food exposure assessment. Thus, the previously-reassessed methomyl tolerances were reintroduced into the analysis and methomyl is included in the cumulative dietary risk analysis described below. Methomyl does in fact contribute to the MOEs provided in Table 1, and the tolerance count is given in two different ways in Table 1, to reflect the status of the methomyl tolerances.

EPA has developed the list of Insignificant Contributor tolerances using the stepwise approach described below.

1. EPA performed a baseline cumulative dietary analysis using all 10 NMCs.
2. EPA removed all tolerances for aldicarb and carbofuran. The IREDs for these two NMCs have not yet been completed as of June 29, 2006, and therefore these tolerances are ineligible for Insignificant Contributor designation.
3. EPA performed a cumulative dietary analysis of the remaining potential Insignificant Contributor crop/chemical combinations. The results are displayed in Figure 2. The plot provides a rank order of the chemical-commodity combinations that contribute to the NMC cumulative food exposure assessment.
4. EPA removed from the analysis, in groups of several tolerances, the crop/chemical combinations which made the highest contribution to the cumulative risk. The DEEM-estimated MOEs that resulted from the sequential removal of each group of tolerances are provided in Table 1. The “removed” crop/chemical combinations in column 1 of Table 1 are **not** deemed Insignificant Contributors at this time because they potentially contribute to NMC cumulative risk (i.e., they are responsible, jointly, for MOEs less than 1000).
5. EPA repeated the removal process described in step 4 until the MOEs at the 99.9th percentile of exposure exceeded 1000 for children age 1-2, the population subgroup determined to have the lowest MOEs. EPA’s analysis of risk to this population subgroup is therefore protective of all other population subgroups groups.
6. All remaining crop/chemical combinations are considered Insignificant Contributors since, when considered together, they contribute only minor amounts to risk, with MOEs of greater than 1000.

Figure 2. Plot of major contributors to the NMC cumulative risk from food, excluding aldicarb and carbofuran



IV. Results of the Insignificant Contributors Analysis

Table 1 presents a summary of the results of the Insignificant Contributors analysis. The table shows, sequentially, the crop/chemical combinations that were removed at each step in the process. The table also provides the number of tolerances removed that were associated with the these crop/chemical combinations, the number of tolerances that remain, the associated MOE, as well as a reference run identification number for the DEEM computer files used to produce these exposure estimates (the DEEM files are provided on the NMC cumulative web page at www.epa.gov/pesticides/cumulative).

Table 1. Summary of Insignificant Contributors analysis conducted with DEEM

Scenario*	Number of Crop/Chemical Combinations Removed	Number of Tolerances		MOE	Ref. Run ID
		NMC tolerances (excluding those previously assessed)	All NMC tolerances		
Baseline (all NMCs)	0	228	320	31	1
Remove all aldicarb and carbofuran crop/chemical combinations	62	166	258	49	2
Remove 12 crop/chemical combinations – <i>methomyl on strawberry, cucurbits, and grape</i> ; carbaryl on strawberry, pome fruit, plum, and peach; formetanate hydrochloride on nectarine, <i>plum (no tolerance)</i> , and peach; and oxamyl on summer squash and cucumber.	12	158	247	154	3
Remove 7 crop/chemical combinations – carbaryl on grape; formetanate hydrochloride on apple; <i>methomyl on spinach, lettuce, cabbage, and peach</i> ; oxamyl on apple	7	155	240	348	4
Remove 6 crop/chemical combinations – formetanate hydrochloride on pear; carbaryl on apricot and beans; and oxamyl on celery and watermelon; <i>methomyl on plum (no tolerance)</i>	6	150	235	519	5
Remove 6 crop/chemical combinations – formetanate hydrochloride on apricot (no tolerance); carbaryl on citrus fruit and peppers; oxamyl on bell pepper; <i>methomyl on apple and succulent beans</i>	6	147	230	783	6
Remove 5 crop/chemical combinations – carbaryl on nectarine and cherry; oxamyl on pear; <i>methomyl on orange and tomato</i>	5	144	225	1224	7

* Italicized crop/chemical combinations are ones for which there are no tolerances, or for which tolerances were previously reassessed (i.e., methomyl).

A total of 144 of the 228 NMC tolerances that remain to be reassessed meet EPA's criteria for designation as Insignificant Contributors due to no exposure or low exposure. A total of 84 tolerances do not meet the Agency's criteria for designation as Insignificant Contributors, either because they are aldicarb or carbofuran tolerances, or because their inclusion in the analysis results in MOEs of less than 1000. Please see Table 2, below, for a summary of the tolerance breakdown. (A listing of the 144 tolerances being reassessed at this time appears in Table A.1. A listing of the 84 tolerances not meeting the Insignificant Contributors criteria appears in Tables A.4 and A.5.) EPA may require mitigation for some of the uses associated with the 84 tolerances not meeting the Insignificant Contributors criteria, in connection with its completion of the outstanding IREDS and release of the revised NMC cumulative risk assessment.

Sixty-nine of the 80 previously-reassessed methomyl tolerances meet EPA's criteria for designation as 'Insignificant Contributors' due to no exposure or low exposure. (A listing of these 69 tolerances appears in Table A.2.) However, eleven methomyl tolerances do not meet the 'Insignificant Contributors' criteria because the Agency needed to remove them from the analysis in order to reach MOEs of greater than 1000. (A listing of these 11 tolerances appears in Table A.3.) Notwithstanding the fact that the methomyl tolerances were reassessed in connection with the 1998 methomyl RED, the Agency may require additional mitigation for some of the methomyl uses associated with the eleven methomyl tolerances that do not meet the 'Insignificant Contributors' criteria. The Agency will make its decision about the necessity of mitigation in conjunction with its completion of the final NMC cumulative risk assessment.

The Agency notes that this is a screening-level assessment designed to ensure that risk is not underestimated. By selecting a point-of-comparison value of 1000, the Agency has produced a conservative assessment that assumes that the interspecies, intraspecies, and FQPA factors will be assigned values of 10. These values are conservative because the Agency anticipates that the interspecies and/or FQPA safety factors for some of the NMCs will be assigned lower values in the revised NMC cumulative assessment, based on recently-submitted data.

Following the completion of the revised NMC cumulative risk assessment, more tolerances are expected to be eligible for reassessment. However, for purposes of this screening-level analysis, the Agency has elected to assign maximum safety factor values to ensure that risk is not underestimated.

Table 2. Summary of tolerances designated as ‘Insignificant Contributors’ compared with tolerances excluded from the assessment

Insignificant Contributors	Tolerances Excluded from the Assessment			
<p><u>144 tolerances</u></p> <ul style="list-style-type: none">• <u>11 tolerances</u>: Crop/chemical combinations with <u>NO</u> detects in <u>all</u> years of PDP monitoring [listed in Table A.1 as “ND”]• <u>27 tolerances</u>: Meat, milk, poultry and egg tolerances for which exposure is deemed negligible [listed in Table A.1 as “M”]• <u>32 tolerances</u>: Livestock feed stuffs associated with the meat, milk, poultry, and egg samples for which few, small, or no detectable residues were found [listed in Table A.1 as “FS”]• <u>74 tolerances</u>: Low contributors^a to cumulative risk (i.e., MOEs of greater than 1000 when considered together) [listed in Table A.1 as “LC”]	<p><u>84 Tolerances</u></p> <ul style="list-style-type: none">• 62 tolerances not eligible (aldicarb and carbofuran)<table border="1"><tr><td>52 low contributors^a <u>10 high contributors</u> 62 TOTAL</td><td>23 aldicarb <u>39 carbofuran</u> 62 TOTAL</td></tr></table><p>[Listed in Table A.5]</p>• 22 tolerances not eligible (high contributors)<table border="1"><tr><td>11 carbaryl 4 formetanate HCl <u>7 oxamyl</u> 22 TOTAL</td></tr></table><p>[Listed in Table A.4]</p>	52 low contributors ^a <u>10 high contributors</u> 62 TOTAL	23 aldicarb <u>39 carbofuran</u> 62 TOTAL	11 carbaryl 4 formetanate HCl <u>7 oxamyl</u> 22 TOTAL
52 low contributors ^a <u>10 high contributors</u> 62 TOTAL	23 aldicarb <u>39 carbofuran</u> 62 TOTAL			
11 carbaryl 4 formetanate HCl <u>7 oxamyl</u> 22 TOTAL				
<p>^a Low contributors are those tolerances that produce MOEs of >1000 when the high contributors are not included in the analysis.</p>				

V. Conclusions

EPA has concluded that the 144 tolerances identified in this document as Insignificant Contributors to the NMC cumulative risk meet the safety standard of section 408(b)(2) of the FFDCA, and may therefore be considered reassessed, pursuant to section 408(q) as of today’s date, June 29, 2006.

As a result of this decision, there are 84 NMC tolerances that remain to be reassessed. These remaining 84 tolerances will be reassessed when EPA completes the IREDs for aldicarb and carbofuran and issues the final NMC cumulative risk assessment.

APPENDIX

Table A.1 Insignificant Contributor Tolerances due to no exposure or low exposure

Pesticide Name	Commodity Name	Reason For Insignificant Contributor Status¹
Carbaryl	Alfalfa	FS
Carbaryl	Alfalfa, Hay	FS
Carbaryl	Almonds	LC
Carbaryl	Almonds, Hulls	FS
Carbaryl	Asparagus	LC
Carbaryl	Bananas	ND
Carbaryl	Beets, Garden, Roots	LC
Carbaryl	Beets, Garden, Tops	FS
Carbaryl	Beets, Sugar	LC
Carbaryl	Blackberries	LC
Carbaryl	Blueberries	LC
Carbaryl	Boysenberries	LC
Carbaryl	Broccoli	LC
Carbaryl	Brussels Sprouts	LC
Carbaryl	Cabbage	LC
Carbaryl	Cabbage, Chinese	LC
Carbaryl	Carrots	LC
Carbaryl	Cattle, Fat	M
Carbaryl	Cattle, Kidney	M
Carbaryl	Cattle, Liver	M
Carbaryl	Cattle, Meat By Products (excluding kidney & liver)	M
Carbaryl	Cattle, Meat	M
Carbaryl	Cauliflower	ND
Carbaryl	Celery	LC
Carbaryl	Chestnuts	LC
Carbaryl	Clover	FS
Carbaryl	Clover, Hay	FS
Carbaryl	Collards	LC
Carbaryl	Corn (including sweet) (kernel + cobs w/ husks removed)	ND
Carbaryl	Corn, Fodder	FS
Carbaryl	Corn, Forage	FS
Carbaryl	Cotton, Seed	FS
Carbaryl	Cranberries	LC
Carbaryl	Cucumbers	LC
Carbaryl	Dandelions	LC
Carbaryl	Dewberries	LC
Carbaryl	Dill	LC
Carbaryl	Eggplant	LC
Carbaryl	Endive (Escarole)	LC
Carbaryl	Filberts (Hazelnuts)	LC
Carbaryl	Flax, Seed	LC
Carbaryl	Goats, Fat	M

Table A.1 Insignificant Contributor Tolerances due to no exposure or low exposure

Pesticide Name	Commodity Name	Reason For Insignificant Contributor Status¹
Carbaryl	Goats, Kidney	M
Carbaryl	Goats, Liver	M
Carbaryl	Goats, Meat By Products (excluding kidney & liver)	M
Carbaryl	Goats, Meat	M
Carbaryl	Grasses	FS
Carbaryl	Grasses, Hay	FS
Carbaryl	Hogs, Fat	M
Carbaryl	Hogs, Kidney	M
Carbaryl	Hogs, Liver	M
Carbaryl	Hogs, Meat By Products	M
Carbaryl	Hogs, Meat	M
Carbaryl	Horseradish	LC
Carbaryl	Horses, Fat	M
Carbaryl	Horses, Kidney	M
Carbaryl	Horses, Liver	M
Carbaryl	Horses, Meat By Products (excluding kidney & liver)	M
Carbaryl	Horses, Meat	M
Carbaryl	Kale	LC
Carbaryl	Kohlrabi	LC
Carbaryl	Lentils	ND
Carbaryl	Lettuce	LC
Carbaryl	Loganberries	LC
Carbaryl	Melons	LC
Carbaryl	Milk	M
Carbaryl	Millet, Proso, Grain	FS
Carbaryl	Millet, Proso, Straw	FS
Carbaryl	Mustard, Greens	LC
Carbaryl	Okra	LC
Carbaryl	Olives	LC
Carbaryl	Oysters	M
Carbaryl	Parsley	LC
Carbaryl	Parsnips	LC
Carbaryl	Peanuts	LC
Carbaryl	Peanuts, Hay	FS
Carbaryl	Peas, Cowpeas	LC
Carbaryl	Peas, Cowpeas, Forage	FS
Carbaryl	Peas, Cowpeas, Hay	FS
Carbaryl	Peas, Vines	FS
Carbaryl	Peas, with Pods	LC
Carbaryl	Pecans	LC
Carbaryl	Pineapples	LC
Carbaryl	Pistachios	LC
Carbaryl	Potatoes	ND
Carbaryl	Prickly Pear Cactus, Fruit	LC
Carbaryl	Prickly Pear Cactus, Pads	LC

Table A.1 Insignificant Contributor Tolerances due to no exposure or low exposure

Pesticide Name	Commodity Name	Reason For Insignificant Contributor Status¹
Carbaryl	Pumpkins	LC
Carbaryl	Radishes	LC
Carbaryl	Raspberries	LC
Carbaryl	Rice	LC
Carbaryl	Rice, Straw	FS
Carbaryl	Rutabagas	LC
Carbaryl	Salsify, Roots	LC
Carbaryl	Salsify, Tops	LC
Carbaryl	Sheep, Fat	M
Carbaryl	Sheep, Kidney	M
Carbaryl	Sheep, Liver	M
Carbaryl	Sheep, Meat By Products (kidney & liver)	M
Carbaryl	Sheep, Meat	M
Carbaryl	Sorghum, Forage	FS
Carbaryl	Sorghum, Grain	FS
Carbaryl	Soybeans	ND
Carbaryl	Soybeans, Forage	FS
Carbaryl	Soybeans, Hay	FS
Carbaryl	Spinach	LC
Carbaryl	Squash, Summer	LC
Carbaryl	Squash, Winter	LC
Carbaryl	Sunflower, Seeds	LC
Carbaryl	Sweet Potatoes	LC
Carbaryl	Swiss Chard	LC
Carbaryl	Tomatoes	LC
Carbaryl	Trefoil, Birdsfoot, Forage	FS
Carbaryl	Trefoil, Birdsfoot, Hay	FS
Carbaryl	Turnips, Roots	LC
Carbaryl	Turnips, Tops	FS
Carbaryl	Walnuts	LC
Carbaryl	Wheat, Fodder, Green	FS
Carbaryl	Wheat, Grain	FS
Carbaryl	Wheat, Straw	FS
Formetanate HCl	Grapefruit	LC
Formetanate HCl	Lemons	LC
Formetanate HCl	Limes	LC
Formetanate HCl	Oranges	LC
Formetanate HCl	Tangerines	LC
Oxamyl	Bananas	ND
Oxamyl	Cantaloupes	LC
Oxamyl	Citrus Fruits	LC
Oxamyl	Cotton, Seed	LC
Oxamyl	Eggplant	LC
Oxamyl	Honeydew	LC
Oxamyl	Peanuts	LC

Table A.1 Insignificant Contributor Tolerances due to no exposure or low exposure

Pesticide Name	Commodity Name	Reason For Insignificant Contributor Status ¹
Oxamyl	Peanuts, Hay	FS
Oxamyl	Peppermint, Hay	FS
Oxamyl	Peppers, Non-Bell	LC
Oxamyl	Pineapples	ND
Oxamyl	Pineapples, Bran	FS
Oxamyl	Potatoes	ND
Oxamyl	Pumpkins	LC
Oxamyl	Soybeans	ND
Oxamyl	Spearmint, Hay	FS
Oxamyl	Squash, Winter	LC
Oxamyl	Tomatoes	LC
Oxamyl	Vegetables, Root Crop	ND

¹ FS = Feed Stuff; LC = Low Contribution; M = Meat, Milk, Poultry, Eggs; ND = No detects in PDP.

Table A.2 Previously reassessed methomyl tolerances which are ‘Insignificant Contributors’ due to no exposure or low exposure

Pesticide Name	Commodity Name
Methomyl	Alfalfa
Methomyl	Asparagus
Methomyl	Avocados
Methomyl	Barley, grain
Methomyl	Barley, hay
Methomyl	Barley, straw
Methomyl	Beans, dry
Methomyl	Beets, Tops
Methomyl	Blueberries
Methomyl	Broccoli
Methomyl	Brussels Sprouts
Methomyl	Cabbage, Chinese
Methomyl	Cauliflower
Methomyl	Celery
Methomyl	Collards
Methomyl	Corn, Fodder
Methomyl	Corn, Forage
Methomyl	Corn, fresh (inc sweet, kernel plus cob with husks removed)
Methomyl	Corn, grain (inc pop)
Methomyl	Cotton, seed
Methomyl	Dandelions
Methomyl	Endive (Escarole)
Methomyl	Grapefruit
Methomyl	Grasses, Bermuda
Methomyl	Grasses, Bermuda, hay (dry, dehydrated)
Methomyl	Kale
Methomyl	Leeks
Methomyl	Lemons

Table A.2 Previously reassessed methomyl tolerances which are ‘Insignificant Contributors’ due to no exposure or low exposure

Pesticide Name	Commodity Name
Methomyl	Lentils
Methomyl	Mint, hay
Methomyl	Mustard, greens
Methomyl	Nectarines
Methomyl	Oats, forage
Methomyl	Oats, grain
Methomyl	Oats, hay
Methomyl	Oats, straw
Methomyl	Onions, green
Methomyl	Parsley
Methomyl	Peanuts
Methomyl	Pears
Methomyl	Peas
Methomyl	Peas, vines
Methomyl	Pecans
Methomyl	Peppers
Methomyl	Pomegranates
Methomyl	Rye, forage
Methomyl	Rye, grain
Methomyl	Rye, straw
Methomyl	Sorghum, forage
Methomyl	Sorghum, grain
Methomyl	Soybeans
Methomyl	Soybeans, forage
Methomyl	Swiss chard
Methomyl	Tangerines
Methomyl	Turnips, greens, tops
Methomyl	Vegetables, brassica, leafy, group 5
Methomyl	Vegetables, fruiting
Methomyl	Vegetables, leafy
Methomyl	Wheat, forage
Methomyl	Wheat, grain
Methomyl	Wheat, hay
Methomyl	Wheat, straw

Table A.3 Previously reassessed methomyl tolerances which are not ‘Insignificant Contributors’ due to high contribution to exposure

Pesticide Name	Commodity Name
Methomyl	Apple
Methomyl	Beans, succulent
Methomyl	Cabbage
Methomyl	Cucurbits
Methomyl	Grapes
Methomyl	Lettuce

Table A.3 Previously reassessed methomyl tolerances which are not ‘Insignificant Contributors’ due to high contribution to exposure

Pesticide Name	Commodity Name
Methomyl	Oranges
Methomyl	Peaches
Methomyl	Spinach
Methomyl	Strawberries
Methomyl	Tomatoes

Table A.4 Tolerances which require reassessment that are not ‘Insignificant Contributors’ due to high contribution to exposure

Pesticide Name	Commodity Name
Carbaryl	Apricots
Carbaryl	Beans
Carbaryl	Cherries
Carbaryl	Citrus Fruits
Carbaryl	Fruits, Pome
Carbaryl	Grapes
Carbaryl	Nectarines
Carbaryl	Peaches
Carbaryl	Peppers
Carbaryl	Plums (fresh prunes)
Carbaryl	Strawberries
Formetanate HCl	Apples
Formetanate HCl	Nectarines
Formetanate HCl	Peaches
Formetanate HCl	Pears
Oxamyl	Apples
Oxamyl	Celery
Oxamyl	Cucumbers
Oxamyl	Pears
Oxamyl	Peppers, Bell
Oxamyl	Squash, Summer
Oxamyl	Watermelons

Table A.5 Tolerances which require reassessment that are not ‘Insignificant Contributors’ because the associated IREDs have not been completed

Pesticide Name	High Contributor versus Low Contributor	Commodity Name
Aldicarb	High	Grapefruit
Aldicarb	High	Oranges
Aldicarb	High	Potatoes
Aldicarb	High	Sweet Potatoes
Aldicarb	Low	Beans, Dry
Aldicarb	Low	Beets, Sugar
Aldicarb	Low	Beets, Sugar, Tops

Table A.5 Tolerances which require reassessment that are not ‘Insignificant Contributors’ because the associated IREDs have not been completed

Pesticide Name	High Contributor versus Low Contributor	Commodity Name
Aldicarb	Low	Citrus, Dried Pulp
Aldicarb	Low	Coffee Beans
Aldicarb	Low	Cotton, Seed
Aldicarb	Low	Cotton, Seed, Hulls
Aldicarb	Low	Lemons
Aldicarb	Low	Limes
Aldicarb	Low	Peanuts
Aldicarb	Low	Pecans
Aldicarb	Low	Sorghum, Grain
Aldicarb	Low	Sorghum, Bran
Aldicarb	Low	Sorghum, Bran
Aldicarb	Low	Sorghum, Grain, Fodder
Aldicarb	Low	Soybeans
Aldicarb	Low	Sugarcane
Aldicarb	Low	Sugarcane, Fodder
Aldicarb	Low	Sugarcane, Forage
Carbofuran	High	Cucumbers
Carbofuran	High	Grapes
Carbofuran	High	Melons
Carbofuran	High	Potatoes
Carbofuran	High	Raisins
Carbofuran	High	Squash
Carbofuran	Low	Alfalfa, Fresh
Carbofuran	Low	Alfalfa, Hay
Carbofuran	Low	Artichokes
Carbofuran	Low	Bananas
Carbofuran	Low	Barley, Grain
Carbofuran	Low	Barley, Straw
Carbofuran	Low	Beets, Sugar
Carbofuran	Low	Beets, Sugar, Tops
Carbofuran	Low	Coffee Beans
Carbofuran	Low	Corn, Fodder
Carbofuran	Low	Corn, Forage
Carbofuran	Low	Corn, Fresh (inc. sweet) (kernel + cob w/ husks removed)
Carbofuran	Low	Corn, Grain (including popcorn)
Carbofuran	Low	Cotton, Seed
Carbofuran	Low	Cranberries
Carbofuran	Low	Milk
Carbofuran	Low	Oats, Grain
Carbofuran	Low	Oats, Straw
Carbofuran	Low	Peppers
Carbofuran	Low	Pumpkins
Carbofuran	Low	Rice
Carbofuran	Low	Rice, Straw
Carbofuran	Low	Sorghum, Fodder

Table A.5 Tolerances which require reassessment that are not ‘Insignificant Contributors’ because the associated IREDs have not been completed

Pesticide Name	High Contributor versus Low Contributor	Commodity Name
Carbofuran	Low	Sorghum, Forage
Carbofuran	Low	Sorghum, Grain
Carbofuran	Low	Soybeans
Carbofuran	Low	Soybeans, Forage
Carbofuran	Low	Soybeans, Hay
Carbofuran	Low	Strawberries
Carbofuran	Low	Sugarcane
Carbofuran	Low	Sunflower, Seeds
Carbofuran	Low	Wheat, Grain
Carbofuran	Low	Wheat, Straw

Table A.6 Tolerances that have already been reassessed

Pesticide Name	Commodity Name
Methiocarb	Citrus Fruits
Methiocarb	Corn, field, grains
Methiocarb	Corn, fodder
Methiocarb	Corn, forage
Methiocarb	Corn (including sweet) (kernel + cobs w/ husks removed)
Methiocarb	Corn, grain (including popcorn)
Methiocarb	Peaches
Methomyl	Alfalfa
Methomyl	Apples
Methomyl	Asparagus
Methomyl	Avocados
Methomyl	Barley, grain
Methomyl	Barley, hay
Methomyl	Barley, straw
Methomyl	Beans, dry
Methomyl	Beans, succulent
Methomyl	Beets, tops
Methomyl	Blueberries
Methomyl	Brassica (Cole) Leafy Vegetables
Methomyl	Broccoli
Methomyl	Brussels sprouts
Methomyl	Cabbage
Methomyl	Cabbage, Chinese
Methomyl	Cauliflower
Methomyl	Celery
Methomyl	Collards
Methomyl	Corn, fodder
Methomyl	Corn, forage
Methomyl	Corn (including sweet) (kernel + cobs w/ husks removed)
Methomyl	Corn, Grain (including popcorn)
Methomyl	Cotton, seed
Methomyl	Cucurbits
Methomyl	Dandelions
Methomyl	Endive (escarole)
Methomyl	Grapefruit
Methomyl	Grapes

Table A.6 Tolerances that have already been reassessed

Pesticide Name	Commodity Name
Methomyl	Grasses, bermuda
Methomyl	Grasses, bermuda, hay (dry, dehydrated)
Methomyl	Kale
Methomyl	Leeks
Methomyl	Lemons
Methomyl	Lentils
Methomyl	Lettuce
Methomyl	Mint, hay
Methomyl	Mustard, greens
Methomyl	Nectarines
Methomyl	Oats, forage
Methomyl	Oats, grain
Methomyl	Oats, hay
Methomyl	Oats, straw
Methomyl	Onions, green
Methomyl	Oranges
Methomyl	Parsley
Methomyl	Peaches
Methomyl	Peanuts
Methomyl	Pears
Methomyl	Peas
Methomyl	Peas, vines
Methomyl	Pecans
Methomyl	Peppers
Methomyl	Pomegranates
Methomyl	Rye, forage
Methomyl	Rye, grain
Methomyl	Rye, straw
Methomyl	Sorghum, forage
Methomyl	Sorghum, grain
Methomyl	Soybeans
Methomyl	Soybeans, forage
Methomyl	Spinach
Methomyl	Strawberries
Methomyl	Swiss Chard
Methomyl	Tangerines
Methomyl	Tomatoes
Methomyl	Turnips, greens, tops
Methomyl	Vegetables, fruiting
Methomyl	Vegetables, leafy
Methomyl	Wheat, forage
Methomyl	Wheat, grain
Methomyl	Wheat, hay
Methomyl	Wheat, straw
Methomyl	Barley, Forage
Methomyl	Beans, Forage
Methomyl	Hops, Dried
Methomyl	Peanuts, Hulls
Methomyl	Rye, Hay
Methomyl	Vegetables, Root Crop
Methomyl	Watercress
Thiodicarb	Corn (including sweet) (kernel + cobs w/ husks removed)
Thiodicarb	Cotton, seed
Thiodicarb	Soybeans
Thiodicarb	Soybeans, hulls

Table A.6 Tolerances that have already been reassessed

Pesticide Name	Commodity Name
Thiodicarb	Cotton, seed, hulls